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EXAMINER	
KARDOS, NEIL R	
ART UNIT	PAPER NUMBER
3623	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/699,265	HANSEN ET AL.	
	Examiner	Art Unit	
	Neil R. Kardos	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-18 and 21-32* is/are pending in the application.

4a) Of the above claim(s) *31 and 32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-18 and 21-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a **NON-FINAL** Office Action on the merits in response to the request for continued examination filed on June 30, 2009. Currently, claims 1, 4-18, and 21-30 are pending and have been examined. Claims 31 and 32 have been amended; however, these claims remain withdrawn from consideration and have not been examined.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 30, 2009 has been entered.

Response to Arguments

Applicant's arguments filed on June 30, 2009 have been fully considered but they are not persuasive. Applicant argues the following:

(A) Claims 1 and 21 recite statutory subject matter under § 101. (See Remarks, page 7).

(B) Gupta does not teach or suggest inputs to a product definition that include engineering requirement callouts. (See Remarks, page 9).

(C) Gupta does not teach or suggest applicability expressions or engineering requirements. (See Remarks, page 9).

The remainder of Applicant's arguments are moot in view of the new grounds of rejection, presented below.

(A) Claims 1 and 21 recite statutory subject matter under § 101.

Regarding argument (A), Examiner respectfully disagrees. Claims 1 and 21 are directed toward the statutory category of a process. In order for a claimed process to be patentable subject matter under 35 U.S.C. § 101, it must either: (1) be tied to a particular machine, or (2) transform a particular article to a different state or thing. *See in re Bilski*, 545 F.3d 943, 956 (Fed. Cir. 2008); *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972). If neither of these requirements is met by the claim, the method/process is not patentable subject matter under § 101. Thus, to qualify as a statutory process under § 101, the claim should positively recite the machine to which it is tied (e.g. by identifying the apparatus that accomplishes the method steps), or positively recite the subject matter that is being transformed (e.g. by identifying the material that is being changed to a different state). Nominal recitations of structure in an otherwise ineligible method fail to make the method a statutory process. *See Bilski*, 545 F.3d at 957; *Benson*, 409 U.S. at 71-72. Thus, incidental physical limitations such as insignificant extra-solution activity and field of use limitations are not sufficient to convert an otherwise ineligible process into a statutory one.

Here, the claimed process fails to meet the above requirements for patentability under § 101 because it is not tied to a particular machine and does not transform an article to a different

state. Merely reciting in the preamble that the method is computer-implemented is insufficient to make the claimed process statutory under § 101.

(B) Gupta does not teach or suggest inputs to a product definition that include engineering requirement callouts.

Regarding argument (B), Examiner respectfully disagrees. Gupta discloses a product definition that includes an identification of the components and their interrelationships (i.e. engineering requirements). (see column 5: lines 23-25). There are four relationships between parts (i.e. engineering requirements): "requires choice, includes, can't work with (or excluded) and removes). (see column 6: lines 27-31). Gupta also discloses that the invention can identify the products that are still available (i.e. manufacturing availability) based on the options that have been selected. (see column 5: lines 39-41). Thus, Gupta discloses a product definition that includes both engineering requirements and manufacturing availability. (see also column 1: lines 21-24, disclosing valid configurations and availabilities; column 1: lines 65-67; column 2: lines 6-39; column 7: lines 26-49). Furthermore, engineering callouts are old and well-known in the art, and have been used on engineering drawings and specifications long before such items were computerized.

(C) Gupta does not teach or suggest applicability expressions or engineering requirements.

Regarding argument (C), Examiner respectfully disagrees. The specification states that "Applicability is a statement defining the conditions under which an item is capable of being

applied." (See Specification, page 6, lines 3-4). Gupta teaches this concept: "Preferably, the part relationships are: included, excluded, removed, and requires choice. An included part is included automatically. A part is excluded from the configuration when its inclusion would result in an invalid configuration. A part may be removed when another part is added." (See column 2: lines 25-39). Gupta teaches ensuring compatibility and validity of configurations based on the components that are included. Product definitions that define the conditions under which a component can be added are utilized in order to perform this validity check. (See column 5: lines 23-25; column 6: lines 1-4 and 22-31). Thus, Gupta teaches applicability expressions and engineering requirements.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 4-18, and 21-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1 and 21: Claims 1 and 21 are directed toward the statutory category of a process. In order for a claimed process to be patentable subject matter under 35 U.S.C. § 101, it must either: (1) be tied to a particular machine, or (2) transform a particular article to a different state or thing. *See in re Bilski*, 545 F.3d 943, 956 (Fed. Cir. 2008); *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972). If neither of these requirements is met by the claim, the method/process is not patentable subject matter under § 101. Thus, to qualify as a statutory process under § 101, the

claim should positively recite the machine to which it is tied (e.g. by identifying the apparatus that accomplishes the method steps), or positively recite the subject matter that is being transformed (e.g. by identifying the material that is being changed to a different state). Nominal recitations of structure in an otherwise ineligible method fail to make the method a statutory process. *See Bilski*, 545 F.3d at 957; *Benson*, 409 U.S. at 71-72. Thus, incidental physical limitations such as insignificant extra-solution activity and field of use limitations are not sufficient to convert an otherwise ineligible process into a statutory one.

Here, the claimed process fails to meet the above requirements for patentability under § 101 because it is not tied to a particular machine and does not transform an article to a different state. Merely reciting in the preamble that the method is computer-implemented is insufficient to make the claimed process statutory under § 101.

Claims 4-18 and 22-30: The dependent claims are rejected for failing to remedy the deficiencies of the claims from which they depend.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-18, and 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta (US 6,405,308) in view of Cookson (US 2004/0083239), and further in view of Official Notice.

Claim 1: Gupta discloses a method comprising using a computer to create a product definition,

- the product definition describing a collection of components for multiple possible configurations of a product (see column 2: lines 6-13, disclosing a product definition that defines parts that must be included, a choice required between two parts, and parts that can be optionally included in a product; column 2: lines 25-39; column 6: lines 1-7, disclosing configuring a product among a set of related products based on availability and compatibility of features and options; column 7: lines 35-56), the product definition also providing details as to how the components are defined (see column 7: line 58 through column 8: line 4, disclosing a parts catalog that stores information about parts, including a description), and wherein creating the product definition includes:
    - creating instancings of one or more usage-based product definition inputs, the inputs including component descriptions and engineering requirement callouts for the different configurations (see column 7: lines 35-56, disclosing creating instances; column 7: line 58 through column 8: line 4, disclosing a parts catalog that stores information about parts, including a description; column 5: lines 23-25, disclosing a product definition that includes an identification of the components and their interrelationships;

column 6: lines 27-31; column 1: lines 21-24, disclosing valid configurations);

- assessing applicability expressions (column 2: lines 25-39, disclosing conditions under which a component is capable of being applied; column 5: lines 23-25; column 6: lines 1-4 and 22-31, disclosing ensuring compatibility and validity of configurations based on the components that are included by utilizing product definitions that define the conditions under which a component can be added) and engineering requirements (see id.) to determine which instancings are available and valid for the different configurations (see id.); and
- generating the product definition based on all instancings that are valid and available (see column 7: lines 35-56).

Gupta does not explicitly disclose that the parts catalog provides details as to how the components are developed and manufactured. Cookson discloses this limitation. (See ¶ 25, disclosing a component catalog with information about articles, including those that are available for manufacturing a product, and those that are available from a supplier; ¶¶ 33-41, disclosing storing information on how a product is assembled; ¶¶ 50, disclosing an assembly definition). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include that additional information from Cookson's parts catalog in the parts catalog of Gupta. This combination of known elements retains the functionality of the separate elements and produces a result that would be predictable to one of ordinary skill in the art. Furthermore, this additional data is nonfunctional descriptive material (such as printed matter or a mere

arrangement of data) because it does not functionally affect the claimed process. Such nonfunctional descriptive material is not given patentable weight absent a new and unobvious functional relationship between the nonfunctional matter and the substrate. *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983); *In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994); MPEP 2106.01. Where the only difference between the prior art product and the claimed invention is printed matter that is not functionally related to the product, the content of the printed matter will not distinguish the claimed product from the prior art. *In re Ngai*, 367 F.3d 1336, 1339 (Fed. Cir. 2004); MPEP 2112.01(III).

Regarding the input of engineering callouts, Examiner takes Official Notice that engineering callouts were old and well-known in the art at the time the invention was made, and have been used on engineering drawings and specifications long before such items were computerized. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include well-known engineering callouts in the product definitions of Gupta. This combination of known elements retains the functionality of the separate elements and produces a result that would be predictable to one of ordinary skill in the art.

Gupta does not explicitly disclose assessing manufacturing availability to determine which instancings are available and valid for different configurations. Cookson discloses this limitation. (See ¶ 25, disclosing including information about articles available for manufacturing a product). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include assess the manufacturing availability information taught by Cookson when determining the availability of features and options as taught by Gupta. One of

ordinary skill in the art would have been motivated to do so for the benefit of an accurate determination of which parts and products are available for manufacturing.

Claim 4: Gupta does not explicitly disclose wherein instancing one or more usage-based product definition inputs includes transforming a coordinate system of a component from a component-centered coordinate system to a product-centered coordinate system.

Official Notice is taken that it is old and well known in the design arts (*e.g.,* AutoCAD) that a coordinate system of a designed part is converted to the coordinate system of a designed system/product when the part is included in a product or system. It would have been obvious to one or ordinary skill in the art at the time of the invention to introduce coordinate transformation when configuring a system from parts, as done by Gupta, in order to simplify the design and presentation of a part when presented as part of a product.

Examiner notes that Applicant has failed to traverse Examiner's Official Notice, which was originally set forth in the previous Office action. Therefore, Examiner's findings of Official Notice are taken to be admitted prior art. See MPEP § 2144.03 (C).

Claim 5: Gupta does not disclose wherein instancing one or more usage-based product definition inputs includes instancing a sub-component having a first configuration, and instancing the sub-component a second time having a second.

Official Notice is taken that it is old and well known in the design arts (e.g., AuoCAD) that selected similar parts can be configured in numerous ways by specifying product parameters. For example, it is old and well known in aviation that airplane seats are configured differently

between coach and first class. It would have been obvious to one or ordinary skill in the art at the time of the invention to allow for instancing a sub-component, as done by Gupta, multiple times, each with a different configuration, as doing so allows for design choices that meet a customer's needs.

Examiner notes that Applicant has failed to traverse Examiner's Official Notice, which was originally set forth in the previous Office action. Therefore, Examiner's findings of Official Notice are taken to be admitted prior art. See MPEP § 2144.03 (C).

Claim 6: Gupta discloses wherein instancing one or more usage-based product definition inputs includes instancing a predetermined component based on a product class configuration rule (see at least Fig 4 and column 2, lines 9-13: "Parts in a product definition are related or classified as: included (parts that are included by default), required choices (a choice among a group of parts that must be made to achieve a valid configuration), optional (parts that can be optionally included in the configuration).")

Claim 7: Gupta discloses wherein the instancing a predetermined component based on a product class configuration rule includes instancing a predetermined component based on a mandatory configuration rule (see at least Fig 4 and column 2, lines 9-13: "Parts in a product definition are related or classified as: included (parts that are included by default), required choices (a choice among a group of parts that must be made to achieve a valid configuration), optional (parts that can be optionally included in the configuration).".

Claim 8: Gupta discloses wherein the instancing a predetermined component based on a product class configuration rule includes instancing a predetermined component based on a configuration default rule (see at least Fig 4 and column 2, lines 9-13: "Parts in a product definition are related or classified as: included (parts that are included by default), required choices (a choice among a group of parts that must be made to achieve a valid configuration), optional (parts that can be optionally included in the configuration).").

Claim 9: Gupta discloses wherein assessing an applicability expression includes assessing an option expression (see at least Fig 4 and column 2, lines 9-13: "Parts in a product definition are related or classified as: included (parts that are included by default), required choices (a choice among a group of parts that must be made to achieve a valid configuration), optional (parts that can be optionally included in the configuration).").

Claim 10: Gupta discloses wherein assessing an option expression includes assessing at least one of a default option expression, an available option expression, and a not available option expression (see at least Fig 4 and column 2, lines 9-13: "Parts in a product definition are related or classified as: included (parts that are included by default), required choices (a choice among a group of parts that must be made to achieve a valid configuration), optional (parts that can be optionally included in the configuration).").

Claim 11: Gupta discloses wherein assessing an option expression includes assessing an option from an option category associated to a product (see at least Fig 4 and column 2, lines 9-

13: "Parts in a product definition are related or classified as: included (parts that are included by default), required choices (a choice among a group of parts that must be made to achieve a valid configuration), optional (parts that can be optionally included in the configuration).").

Claim 12: Gupta discloses wherein assessing an option expression includes assessing at least one of a mandatory option or a mutually exclusive option (see at least Fig 4 and column 2, lines 9-13: "Parts in a product definition are related or classified as: included (parts that are included by default), required choices (a choice among a group of parts that must be made to achieve a valid configuration), optional (parts that can be optionally included in the configuration).").

Claim 13: Gupta discloses wherein assessing an applicability expression includes assessing a configuration rule, the configuration rule being adapted to at least one of validate a configuration specification and populate a configuration specification (see at least abstract: "A configuration system validates a configuration using the system definition, the current state of the configuration and user input.").

Claims 14 and 15: Gupta does not explicitly disclose wherein instancing one or more usage-based product definition inputs includes instancing a public instance representation of a lower level product by a higher level product or wherein instancing a public instance representation of a lower level product by a higher level product includes filtering the public instance representation through the instance of the higher-level product.

In light of the specification and ordinary skill in the art of object-oriented programming and design (OOP/D), claims 14 and 15 appear to recite the well known operation of inheritance in an object class hierarchy, namely, that object creation ("instancing of a representation") of a child class necessarily creates an instance of the parent class ("instancing of a public class"), and that creating an instance of the child parent necessarily applies the object creation rules of the parent (i.e. the so called "filtering" of the public instance representation).

Official Notice is taken that such OOP/D concepts and operations are old and well known to those of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art to use such operations and concepts as are found in OOP/D in the implementation of Gupta, the parts representations and relationships represented in an object class hierarchy, thus necessarily including the operations as recited, as this would have provided a well known programming methodology to a design methodology which closely matches the inherent nature of object-oriented programming.

Examiner notes that Applicant has failed to traverse Examiner's Official Notice, which was originally set forth in the previous Office action. Therefore, Examiner's findings of Official Notice are taken to be admitted prior art. See MPEP § 2144.03 (C).

Claim 16: Gupta does not explicitly disclose wherein instancing one or more usage-based product definition inputs includes instancing in accordance with a configuration at location option by a customer.

Official Notice is taken that it is old and well known in the design arts to custom design/configure certain products per a customer's specification. Furthermore, it is old and well

known to do so based on the product's intended location. Multiple products are designed to meet a customer's spatial needs. For example, it is old and well known in aviation that airplane seats are configured differently between coach and first class. It would have been obvious to one or ordinary skill in the art at the time of the invention to allow for configuring a product, as done by Gupta, by taking into account a customer's location needs as doing so increases the odds of selling a product and guaranteeing customer satisfaction and repeat business.

Examiner notes that Applicant has failed to traverse Examiner's Official Notice, which was originally set forth in the previous Office action. Therefore, Examiner's findings of Official Notice are taken to be admitted prior art. See MPEP § 2144.03 (C).

Claims 17 and 18: Gupta does not explicitly disclose wherein at least one of instancing one or more usage-based product definition inputs includes instancing in accordance with a unitized manufacturing assembly plan or wherein assessing at least one of an applicability expression, an engineering requirement, and a manufacturing availability expression includes assessing in accordance with a unitized manufacturing assembly plan.

Official notice is taken that it is old and well known in the art of design and manufacturing to select and design a product with accordance with a manufacturing assembly plan. For example, Design for Manufacturability (DFM) and Design for Assembly (DFA) ensure that system design meet feasible manufacturability requirements. It would have been obvious for one of ordinary skill in the art at the time of the invention to implement DFM and DFA practices with the design and system configuration of Gupta, as doing so ensures that product design meets feasible manufacturability requirements for each part and/or component in

the design. In addition, implementing DFM and DFA practices has the added benefit of reducing the assembly time and assembly costs.

Examiner notes that Applicant has failed to traverse Examiner's Official Notice, which was originally set forth in the previous Office action. Therefore, Examiner's findings of Official Notice are taken to be admitted prior art. See MPEP § 2144.03 (C).

Claim 21: Claim 21 is substantially similar to claim 1 and is rejected under similar rationale. However, Gupta and Cookson do not explicitly disclose using the claimed methodology on an air vehicle. Gupta teaches selecting and configuring a product based on availability and compatibility of features and options. The recitation of fuselage (and its components) and propulsion systems are intended use and the method steps do not depend on any actual data/inputs/rules used; hence the applicability of the method to an air vehicle definition is not given any patentable weight. Per Gupta, column 5, lines 46-48: "Examples of systems that can be maintained or configured using the invention include automobiles, computers, time clock machines, and shoes." Per Cookson, paragraph 6: "a personal computer, an automobile, a construction project, etc." It would have been obvious to one of ordinary skill in the art at the time of the invention to extend the methods of Gupta and Cookson to define airplanes, helicopters, trains, and other tailored products as all are known to have customizable features that depend on a customer's needs and preferences. This rationale also applies to the rejection of claims 22-30, which depend from claim 21.

Claim 22: Claim 22 is substantially similar to claim 4 and is rejected under similar rationale.

Claims 23-25: Claims 23-25 are substantially similar to claim 6-8 and are rejected under similar rationale.

Claim 26: Claim 26 is substantially similar to claim 10 and is rejected under similar rationale.

Claims 27-29: Claims 27-29 are substantially similar to claims 13-15 and are rejected under similar rationale.

Claim 30: Claim 30 is substantially similar to claims 17-18 and is rejected under similar rationale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Ouchi (US 2003/0163214), directed to a consolidated component catalog, including assembly information in the stored product description.
- Weisman (US 2003/0014329), directed to a parts catalog, including storing information for air vehicles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil R. Kardos whose telephone number is (571) 270-3443. The examiner can normally be reached on Monday through Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Neil R. Kardos
Examiner
Art Unit 3623

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